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CTF-066973

COMPONENT RELIABILITY ASSESSMENT

RECEIVED

SYSTEM: W31-2
 MAJOR ASSEMBLY: MC1185 Firing Set
 COMPONENT: 116146 Pulse Transformer
 FAILURE EVENT: K6 - Failure of one pulse transformer
 by shorting of primary.

AUG 1 - 91

CENTRAL INTELLIGENCE AGENCY

K7 - Failure of one trigger transformer
 for any cause other than shorted
 primary.

ASSESSMENT VALUE: K6 - 0.00001
 K7 - 0.00004

ASSESSMENT DATE: March 1988

RELIABILITY ANALYST: Exemption 6, 7222

Exemption 6

ASSESSMENT RATIONALE:

The pulse transformers used in the MC1185 Firing Set are from a family of transformers that are all similar in design and are used in various weapons. The probability of a pulse transformer failure is assessed at 0.00005 based on SLT/LCTP test data in Table 1, which are considered the most applicable for assessing the failure rate of the above events, since these data represent transformers that have seen stockpile aging and the environments. Other data in Table 1 are shown in support of the assessment. It is estimated that 25% of all transformer failures are due to shorted primaries and 75% due to failures from all other causes including shorted secondaries. Event K6 involves failure due to a shorted transformer primary, and is, therefore, assessed at 0.00001 ($.25 \times 0.00005$). Event K7 is assessed at 0.00004 ($.75 \times 0.00005$).

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Table 1 - Pulse Transformer Test Data

<u>Source</u>	<u>No. Transformers Tested</u>	<u>Failures</u>
SLT/LCTP	9,360	0
SLT/LCTP(Ret.)	<u>11,256</u>	<u>1*</u>
Totals	20,616	1

Support Data

Next Assembly

Firing Sets

D/E-tests 8,873 0

D/E-tests (Ret.) 5,031 0

Totals 13,904 0

*SLT-MC1191/W54 Firing Set (Ret.) - Shorted secondary winding in pulse transformer.

DATA-ASSESSMENT COMPARISON CHART

- KEY**
- Data not in SUM
 - Upper 90 Per Cent Limit
 - Single Data Source
 - Point Estimate
 - 50 Per Cent Limit
 - Combined Data Sources
 - Point Estimate
 - 50 Per Cent Limit

